



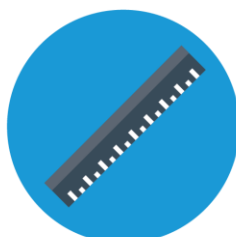
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Cost-effective cross-tenure feral deer management project – Evaluation framework

Prepared for
Natural Resources Commission



RESEARCH



EVALUATION



DESIGN

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Contents

Contents	ii
Tables	iii
Figures	iii
1 Introduction	4
1.1 Overview	4
1.2 Purpose and objectives of evaluating the feral deer management project	4
1.3 This document.....	5
2 Background to the feral deer management project	6
2.1 Aim and key components of the project	6
2.2 Activities and expected outcomes	14
3 Evaluation objectives and focus	16
3.1 Objectives and evaluation stages	16
3.2 Key evaluation questions	16
3.3 Evaluation audience	18
4 Indicators, data sources and methods	19

Tables

Table 1. Questions from the Business Case and Monitoring and Research Framework - organised in terms of the 'area of investigation' and under a series of broader (implied) project objectives..... 8

Table 2. Focus of the three evaluations scoped for the feral deer management project..... 16

Table 3. Key evaluation questions for the feral deer management project..... 16

Table 4. Evaluation audience. 18

Table 5. Key evaluation questions, indicators/issues to consider in addressing these questions and potential data sources and methods. 20

Table 6. Summary of key methods for evaluating the feral deer management project. 27

Figures

Figure 1. Project objectives as interpreted from monitoring and evaluation framework, alongside key monitoring/research/analysis components (see also Table 1)..... 7

Figure 2. Draft project logic for the deer management project. Note the current uncertainty about whether adoption by other land managers is likely based on the project activities/timing..... 15

1 Introduction

1.1 Overview

The Cost-effective cross-tenure feral deer management project (the feral deer management project) aims to:

Develop new cost-effective, humane and coordinated control techniques for feral deer in NSW to ensure population levels can be managed sustainably by land managers into the future.¹

The project has \$9.2 million in funding from the NSW Environmental Trust and a further \$7.4 million in cash and in-kind contributions. It is being run by the National Parks and Wildlife Service (NPWS), together with a range of community and research partners.

The project is being delivered over an eight-year period, from July 2019 to June 2027. Over this period the project will be evaluated at key points.

This document provides a framework to guide evaluation of the project.

1.2 Purpose and objectives of evaluating the feral deer management project

The feral deer management project has the potential to provide substantial benefit to the NSW Environment. It also involves a significant investment of resources delivered over a long time under the Environmental Trust's major project program. As such, there is a need to evaluate the project with the objectives of:

- documenting expenditure and outcomes to **provide transparency and accountability for the expenditure of public funds**
- identifying lessons and opportunities to improve the support of project delivery
- exploring the overall design, delivery and impact of the project to **help to inform future decisions by the Environmental Trust on project investments and design.**

These objectives, and the focus of evaluating the project, are discussed more in Section 3.

It is also important to note that this evaluation framework is piloting a new evaluation strategy for Environmental Trust major projects, which is being developed by the Natural Resources Commission. The proposed strategy recognises a need for high-risk and/or long-term major projects to have evaluation during the implementation and roll-out of such projects to:

- identify early indicators of project failure that need to be addressed
- identify lessons that have applicability across other projects
- provide assurance the project is being managed effectively
- ensure the correct information is being collected to support evaluation activities.

¹ Feral deer management project business plan. 2019. Environmental Trust.

1.3 This document

This document provides a framework to guide evaluation of the feral deer management project. This includes:

- a brief background to the feral deer management project, including outlining its expected activities and outcomes (Section 2).
- describing the objectives of the evaluation and a set of key evaluation questions to guide data collection, analysis and reporting (Section 3).
- a series of indicators and key issues that the evaluation is to consider, together with potential data sources and methods against each of the key evaluation questions (Section 4).

2 Background to the feral deer management project

2.1 Aim and key components of the project

As noted in Section 1.1, **the feral deer management project aims to develop new cost-effective, humane and coordinated control techniques for feral deer in NSW to ensure population levels can be managed sustainably by land managers into the future.**

The project centres on testing a range of control techniques at a landscape scale to better understand what is cost effective in controlling deer, including whether a large-scale ‘knock down’ of the population (~70% reduction) can then be maintained by landholders using cost-effective techniques. The investigative, exploratory nature of the project means that a substantial proportion of its work is on monitoring and research – both of deer populations but also the vegetative communities they are impacting.

This is complemented with a range of work that seeks to extend the results of this applied research. This includes raising the profile of deer management and fostering adoption of the new methods and approaches among private and public land managers.

The feral deer management project does not have an explicitly documented set of objectives. Instead, the project has been established around a range of activities and outcomes (see the program logic in 2.2) and a series of monitoring and research questions documented in the Deer Monitoring and Research Framework.² We have translated these questions into a working set of objectives for the feral deer management project (Figure 1). Table 1 also groups and structures these questions in a way that brings a coarse hierarchy to the questions. This will be used in Section 3 to help define evaluation questions that avoid overlap of questions that will be addressed as part of the project itself.

² Environmental Trust – Cost-effective cross tenure feral deer management project 2019-2027: Deer monitoring and research framework. April 2021. NSW Department of Planning, Industry and Environment

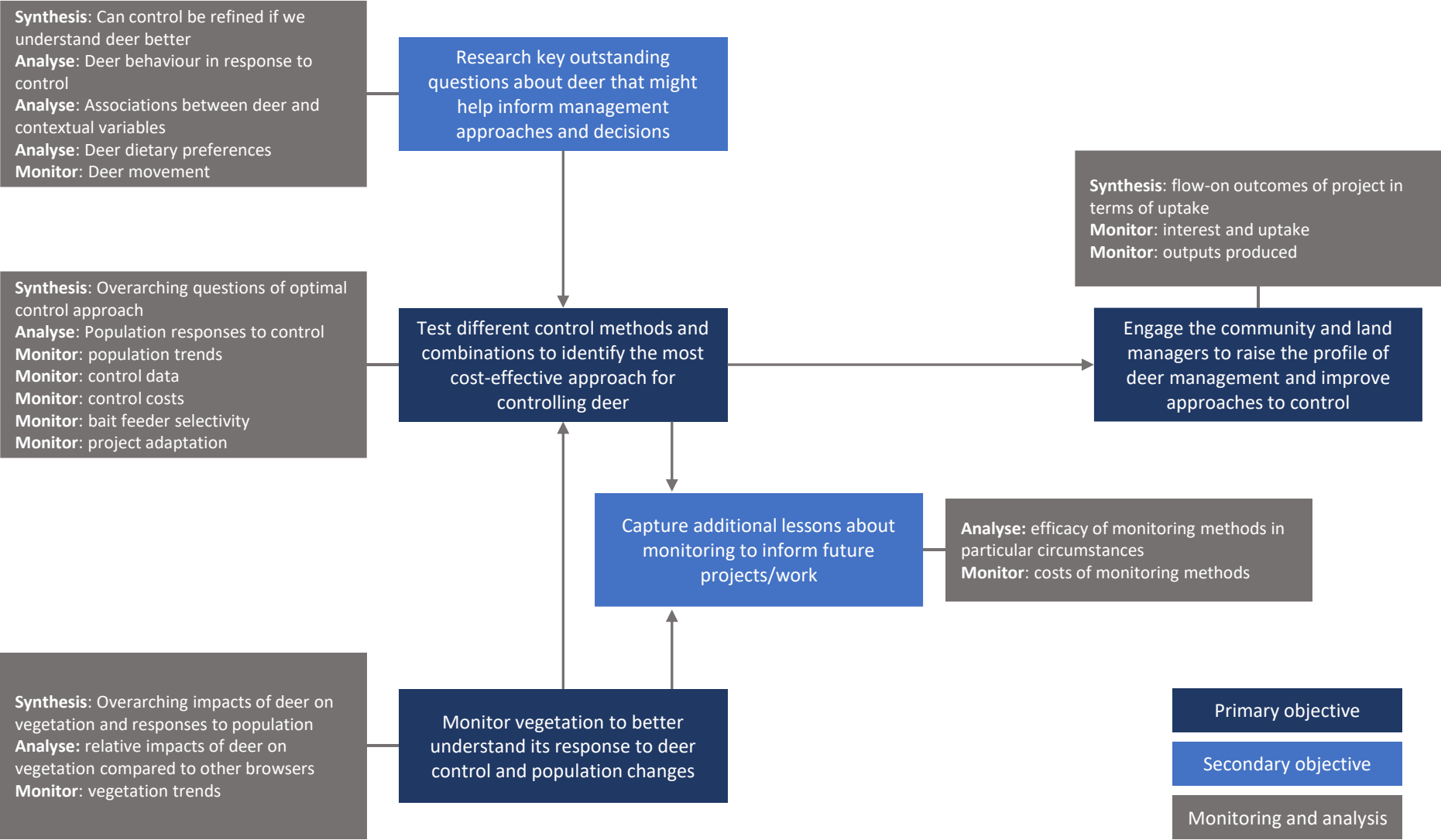


Figure 1. Project objectives as interpreted from monitoring and evaluation framework, alongside key monitoring/research/analysis components (see also Table 1).

Table 1. Questions from the Business Case and Monitoring and Research Framework - organised in terms of the 'area of investigation' and under a series of broader (implied) project objectives.

Implied objective	Area of investigation	Monitoring/research question (from Monitoring and Research Framework)	Related question from Business Case	Comment
Test different control methods and combinations to identify the most cost-effective approach for controlling deer				
	Overarching questions	Have different combinations of control methods resulted in different outcomes for deer populations? (Q26)	Have different combinations of control methods resulted in different outcomes for deer populations?	This is the same question in the Business Plan and Monitoring and Research Framework
	Overarching questions	What is the optimal strategy for conducting a deer population knock down based on our knowledge of deer distribution, abundance, movement and sociality and deer control expert knowledge? (Q15)		
	Population responses to control	Does the deer population decrease by 70% (\pm 10%) in the project area as a result of the population knock down intervention? (Q19) Does the deer population decrease by 70% (\pm 10%) in the project area immediately after the knock down intervention? (Q5)	Has there been a significant decrease in feral deer numbers	Q5 is a piece of evidence to address Q19
	Population responses to control	Has the initial reduction in deer numbers been maintained by the deer control program? (Q20)	Has the initial reduction in deer numbers been maintained	This question will rely on population trend data (below)
	Simple population trends	Does the deer population remain low in the project area over the life of the project? (Q6)		
	Simple population trends	How many deer (and horses) are there in the project area over time? (Q3)		
	Simple population trends	How many deer (and sympatric herbivores) are there in the Interface and Big Boggy areas over time? (Q4)		

Implied objective	Area of investigation	Monitoring/research question (from Monitoring and Research Framework)	Related question from Business Case	Comment
	Simple control data	How many deer are removed from the project area by each deer control method over the life of the project and how much time does it take? What species, age class and sex were removed? (Q1)		Basic output data to help inform understanding of more complicated population trend data
	Simple control data	How many deer are removed during the population knock down by each control method? What species, age class or sex were they?		Basic output data to help inform understanding of more complicated population trend data
	Cost-effectiveness	How much do different control techniques 'cost' to implement? (Q16)	Has there been an increase in knowledge on the cost per control technique	
	Bait feeder selectivity		Is the new technology fit for purpose?	Question specific to the bait feeder selectivity
	Project responses to data		Is the monitoring informing the control methodology	If established with a clear research question in mind, it might not be appropriate to adapt the control strategy unless there is a clear rationale and way to ensure that changes do not compromise the design of the trial
Research key outstanding questions about deer that might help inform management approaches and decisions				
	Overarching questions	Can we refine effectiveness of control techniques using intelligence gained from monitoring deer abundance, distribution, movement and sociality? (Q18, Q25)		Question repeated twice in the framework
	Responses to control	Do deer locations (i.e. distribution) change after the knock-down intervention? (Q22)		

Implied objective	Area of investigation	Monitoring/research question (from Monitoring and Research Framework)	Related question from Business Case	Comment
	Responses to control	Do deer home range sizes decrease, and the movement of individuals decline after the population knock-down? (Q27)		
	Responses to control	Is deer sociality correlated with deer control activities, environmental factors or biological factors (e.g. rut)? (Q28)		
	Responses to control	Is there an increase in the heterozygosity of sambar and fallow deer populations after the population knock down within the project area? (Q29)		
	Response to control	What are the impacts of increased numbers of deer carcasses?		No monitoring questions have been specified but there is a research project proposed to examine this potential issue
	Basic research on movement	Are deer locations (i.e. distribution) associated with environmental features (e.g. water, wallows, open grassland, altitude) and does it change over time? (Q21)		
	Basic research on movement	Does the deer population remain low in the Interface and Big Boggy areas over the life of the project? (Q7)		
	Basic research on movement	How many deer and sympatric herbivores congregate at selected feeding locations on the interface (6 cameras) and the Big Boggy (4 cameras)? Are there patterns of use of feeding locations? If so, are they related to time of day, season, altitude, weather (temperature, snow, rain) (Q23)		

Implied objective	Area of investigation	Monitoring/research question (from Monitoring and Research Framework)	Related question from Business Case	Comment
	Basic research on movement	At what time of day do deer move from cover to feeding areas and back on the interface (Highway cameras)? Is it correlated with first light? (Q8)		
	Basic research on deer impacts on vegetation	Do sambar and fallow deer selectively graze and browse? (Q32)		
	Basic research on deer impacts on vegetation	If deer show selective herbivory, what plant species are most heavily impacted and how? (Q33)		
	Basic research on deer impacts on vegetation	Is the diet of deer within the project area the same or different to sympatric herbivores (macropods, wombats, horses, cattle and lagomorphs)? (Q34)		
Monitor vegetation to better understand its response to deer control and population changes				
	Overarching questions	What is the impact of deer and other herbivores on vegetation communities within the project area? (Q31)		
	Overarching questions	What is the impact on agricultural pasture? (Q30)		
	Overarching questions	Is there a relationship between vegetation cover and abundance, ground cover biomass and browse damage with herbivore abundance? (Q24)		
	Vegetation trends	Does cover and abundance of native plant species change in the project area over the life of the project? (Q9)		

Implied objective	Area of investigation	Monitoring/research question (from Monitoring and Research Framework)	Related question from Business Case	Comment
	Vegetation trends	Does ground cover biomass (native and agricultural pasture) change in the project area over the life of the project? (Q10)	Has there been an increase in the condition and availability of selected native and pasture plants on site	
	Vegetation trends		Is there evidence of initial recovery of selected species on site	
	Vegetation trends	Does browse damage change over the life of the project? (Q11)		
	Vegetation trends	Are there visual changes in vegetation in the project area over the life of the project? (Q14)		
	Specific impacts on vegetation	Does cover and abundance, ground cover biomass and browse damage change in the project area over the life of the project when horses, cattle and deer are excluded? (Q12)		
	Specific impacts on vegetation	Does cover and abundance, ground cover biomass and browse damage change in the project area over the life of the project when horses and cattle are excluded? (Q13)		
Engage the community and land managers to raise the profile of deer management and improve approaches to control				
	Flow-on outcomes of project		Are other pest management agencies applying the tools and learnings from the project?	
	Flow-on outcomes of project		Are land managers in the project site applying the new control options	
	Early engagement outcomes		Are other land managers keen to adopt the new control techniques	
	Early engagement outcomes		Is there evidence the public is interested in deer impacts	

Implied objective	Area of investigation	Monitoring/research question (from Monitoring and Research Framework)	Related question from Business Case	Comment
	Engagement outputs		Has the project been promoted and the lessons and products disseminated among peers?	
	Engagement outputs		Have the benefits of a landscape scale integrated management approach been promoted?	
Capture additional lessons about monitoring to inform future projects/work				
	Improving monitoring methods	Does deer movement between open and vegetated areas potentially bias thermal aerial population estimates? If so, can correction factors be developed? (Q35)		
	Improving monitoring methods	Is there an improvement in detectability using thermal binoculars for ground and aerial surveys of deer? If so, by how much? (Q36)		
	Cost-effectiveness of monitoring	How much do different monitoring methods 'cost' to implement? (Q17)		

2.2 Activities and expected outcomes

The Business Plan for the feral deer management project outlines the overarching aim of the project and a set of outcomes that the project is expected to contribute to. To help demonstrate and test how the outcomes relate to each other and how they align to form groups of activities, Figure 2. Draft project logic for the deer management project. Note the current uncertainty about whether adoption by other land managers is likely based on the project activities/timing. Numbers in brackets = outcomes as listed/referenced in the Deer Monitoring and Research Framework (April 2021). outlines a one-page project logic for the feral deer management project. This summarises what the project is doing (its key activities), the main things it is expecting to produce (its outputs) and the changes it is expecting to deliver (its outcomes). In turn, this project logic has been used to structure the evaluation questions and data collection (Section 3.2).

The project logic is relatively high level to help it accommodate minor changes to the project design, noting that it should be updated as the project progresses, lessons are identified and changes to delivery/expectations shift. In particular, we understand that the extent to which the project can change the behaviour of other land managers is something that will be assessed and reviewed as part of project management.

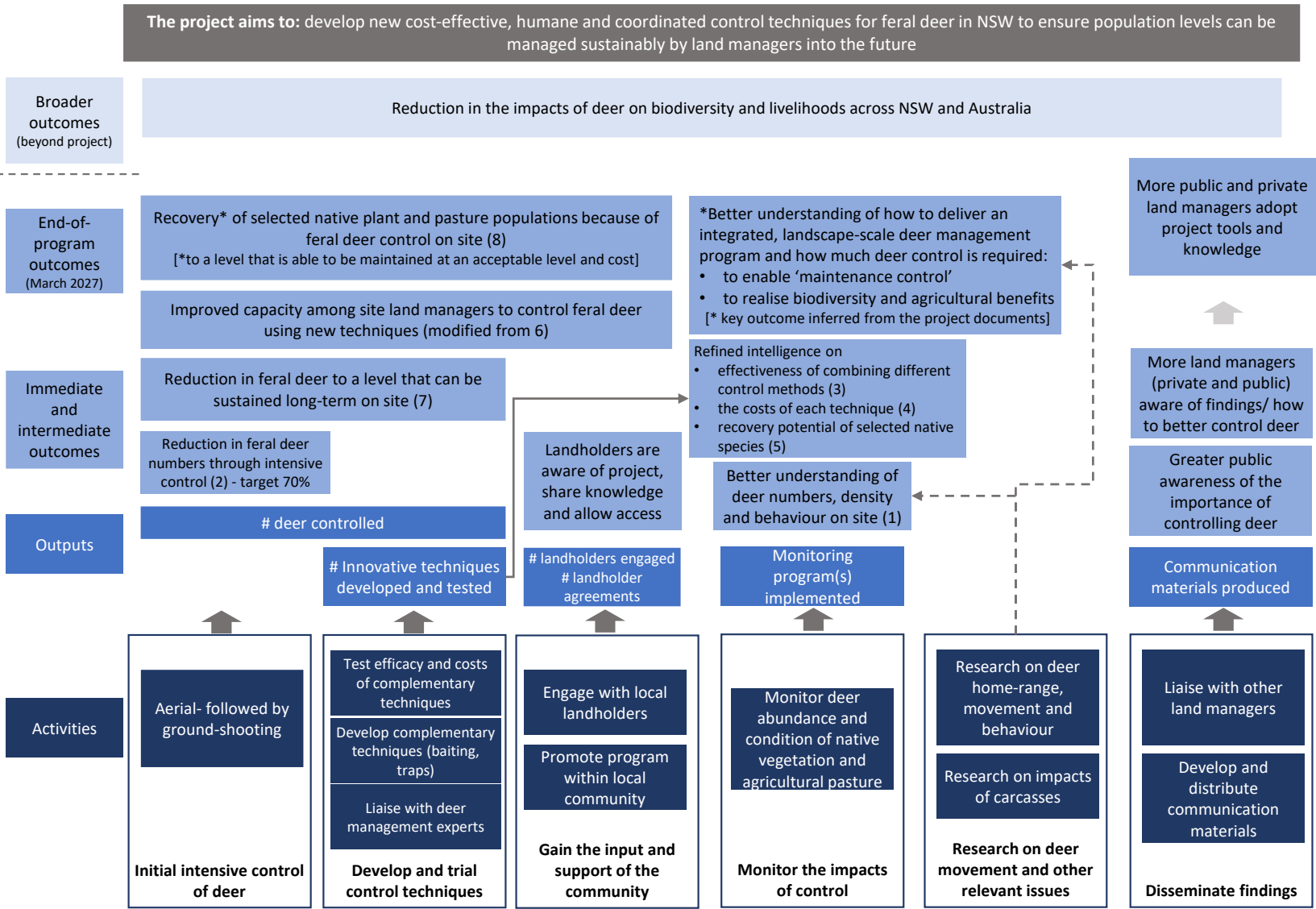


Figure 2. Draft project logic for the deer management project. Note the current uncertainty about whether adoption by other land managers is likely based on the project activities/timing. Numbers in brackets = outcomes as listed/referenced in the Deer Monitoring and Research Framework (April 2021).

3 Evaluation objectives and focus

3.1 Objectives and evaluation stages

As noted in Section 1.2, **the overarching objectives of evaluating the feral deer management project are to:**

- documenting expenditure and outcomes to **provide transparency and accountability for the expenditure of public funds**
- identifying lessons and opportunities to improve the support of project delivery
- exploring the overall design, delivery and impact of the project to **help to inform future decisions by the Environmental Trust on project investments and design.**³

These objectives are planned to be addressed through evaluation at three different stages of the feral deer management project (Table 2). These stages each have a slightly different focus, reflected in the key evaluation questions posed for each (Section 3.2).

Table 2. Focus of the three evaluations scoped for the feral deer management project.

Stage	Focus
Early formative evaluation (mid 2021)	Appropriateness of project establishment and design, assessment of project risks
Mid-term/interim evaluation (2024)	Project delivery, early results and opportunities for refinement
Final evaluation (project completion - 2027)	Overall effectiveness, efficiency and lessons

3.2 Key evaluation questions

Key evaluation questions help scope evaluations and focus in on the main areas of interest. The key evaluation questions for each stage of the feral deer management project are outlined in Table 3. Further information on how these key evaluation questions are to be addressed is provided in Section 4, including potential indicators and more specific issues to consider.

Table 3. Key evaluation questions for the feral deer management project.

Key evaluation questions	Sub-questions
Early formative evaluation	
1. How well has the project been established and what	a. To what extent are key project management documents and processes appropriate to the scale of the project and being used?
	b. What challenges have there been and what are the implications?

³ These objectives align with the *NSW Government Program Evaluation Guidelines 2016*

Key evaluation questions	Sub-questions
lessons and improvements are there?	<ul style="list-style-type: none"> c. Are the project governance structures appropriate and how well are they working? d. What other lessons are there from the initial stages of the project?
2. To what extent is the project design appropriate, given its intended outcomes?	<ul style="list-style-type: none"> a. Are the project activities aligned with the intended objectives, outcomes and funding requirements? b. What key assumptions underpin the project and is the project design being adapted in response to learnings? c. Is the research/monitoring framework/design likely to provide the answers to key project questions? d. Is there a clear and shared vision of success? e. Is the planned expenditure on different components in line with the objectives of the project? f. To what extent are relevant stakeholders being involved?
Mid-term/interim evaluation	
3. How well is the project being implemented?	<ul style="list-style-type: none"> a. To what extent are the planned activities, outputs, budget and milestones on track? b. How well are the management, governance and engagement processes working, are risks being managed appropriately and is the project design being adapted in response to learnings?
4. How effective are key elements of the project?	<ul style="list-style-type: none"> a. What are the key outcomes and achievements so far? b. To what extent are the monitoring methods and data likely to be adequate for future evaluation?
5. What opportunities are there to improve the design, delivery or monitoring of the project?	<ul style="list-style-type: none"> a. What project delivery issues or learnings need to be accommodated? b. Are there any early insights on how the impacts from the project could be strengthened?
Final evaluation	
6. To what extent has the project achieved its aim and objectives?	<ul style="list-style-type: none"> a. To what extent has the project delivered an improved understanding of deer control? b. To what extent do we now have cost-effective methods (or a methodology) that can be implemented at a landscape scale? c. What is the level of interest in and uptake of the new methods? d. Have there been any other outcomes?
7. How efficient was the project and how could it have delivered more value for money?	<ul style="list-style-type: none"> a. How could the efficiency of delivery have been improved? b. What opportunities are there to leverage the results /ensure the project leaves a lasting legacy?
8. What are the key lessons for the Environmental Trust and the project team?	<ul style="list-style-type: none"> a. What are the overall lessons on project design? b. What are the overall lessons on project delivery and evaluation?

3.3 Evaluation audience

The range of key stakeholders that have an interest in the evaluation is outlined in Table 4.

Table 4. Evaluation audience.

Stakeholder group	Interest(s)	Relevance
NPWS	<ul style="list-style-type: none"> opportunities for improving project design and delivery overall outcomes and achievements specific findings in relation to deer control lessons lessons for delivering future projects of similar nature 	High
NSW Environmental Trust	<ul style="list-style-type: none"> opportunities for improving project design and delivery overall outcomes and achievements lessons for delivering future projects of similar nature 	High
Project partners	<ul style="list-style-type: none"> overall outcomes and achievements specific findings in relation to deer control lessons 	High
Other agencies	<ul style="list-style-type: none"> overall outcomes and achievements specific findings in relation to deer control lessons 	Medium
General public (specifically land managers)	<ul style="list-style-type: none"> overall outcomes and achievements specific findings in relation to deer control lessons 	Medium

4 Indicators, data sources and methods

Table 5 below builds on the key evaluation questions from Section 3.2. It provides a greater level of detail about the indicators and issues to consider (i.e. further sub-questions) that will help address each question. It also outlines potential data sources and methods, which are then summarised in Table 6

Note that the aim of this framework is to provide a guide for future evaluations and collection of appropriate data. This does not preclude changes or additions to these questions and indicators through time in line with project needs and interests – something that is likely to occur given the extended time the project will be delivered over. The framework is also reasonably high level. This:

- provides overarching guidance on what the evaluation needs to explore, distinguishing it from the detailed research and monitoring questions and/or the standard reporting to the Environmental Trust
- provides flexibility in delivery so that the project can shift and change without re-writing the evaluation plan
- retains enough detail to ensure that sufficient data is being collected along the way to evaluate the outcomes of the project and understand its overall efficacy.

Table 5. Key evaluation questions, indicators/issues to consider in addressing these questions and potential data sources and methods.

KEQ and sub-questions	Indicator/issues to consider	Data sources and methods	Comment
Early formative evaluation			
1. How well has the project been established and what lessons and improvements are there?			
a. To what extent are key project management documents and processes appropriate to the scale of the project and being used?	<ul style="list-style-type: none"> Project plan and relevant supporting documents available Level of detail in documents appropriate to size, scale and complexity of project Feedback from key project stakeholders on utility of any templates/pro-forma 	Review of project documentation Interviews with project manager/other relevant staff	Not an audit of project documentation but a high-level check of whether key documents are in place, their perceived value and opportunities for improving documentation/ processes
b. What challenges have there been and what are the implications?	<ul style="list-style-type: none"> Feedback from key project stakeholders Documentation describing challenges Assessment of implications for project delivery 	Review of project documentation Interviews with project manager/other relevant staff	
c. Are the project governance structures appropriate and how well are they working?	<ul style="list-style-type: none"> Description of project governance structures based on project documentation Feedback from key project stakeholders on benefits and issues with structures Assessment of gaps, potential conflicts of interest or other issues 	Review of project documentation Interviews with project manager/other relevant staff Interviews with steering committee members	
d. What other lessons are there from the initial stages of the project?	<ul style="list-style-type: none"> Other lessons/issues identified in documentation Feedback from project stakeholders 	Review of project documentation Interviews with project manager/other relevant staff	To include exploration of 'what has worked well', 'where are the opportunities for improvement'
2. To what extent is the project design appropriate, given its intended outcomes?			
a. Are the project activities aligned with the intended objectives, outcomes and funding requirements?	<ul style="list-style-type: none"> Logical alignment between activities and outcomes (independently assessed) Evidence base exists to support activities Feedback from key project stakeholders on gaps/weaknesses in the logic 	Review of project documents and development and testing of project logic	A detailed literature review may be beyond the scope of this initial evaluation but could be considered as part

KEQ and sub-questions	Indicator/issues to consider	Data sources and methods	Comment
		Interviews with project manager/other relevant staff/partners Literature review on key project components (e.g. deer control methods, extension activities)	of project activities/to strengthen the design. There is also potential to consult independent experts on key components
b. What key assumptions underpin the project and is the project design being adapted in response to learnings?	<ul style="list-style-type: none"> • Identification of assumptions underpinning program logic • Documentation discussing project assumptions and management • Feedback from key project stakeholders on assumptions and how they are being addressed • Feedback from project stakeholders on adaptations to the project design 	Review of project documentation Interviews with project manager/other relevant staff/partners	
c. Is the research/monitoring framework/design likely to provide the answers to key project questions?	<ul style="list-style-type: none"> • Clear monitoring and research questions linked to project objectives/aims • Experimental/monitoring/research design adequately planned and detailed • Assessment of the level of power/likely statistical validity of results 	Review of project documentation (monitoring and research plan/research proposals/plans) Interviews with project manager/other relevant staff/partners	May require support by a biometrician
d. Is there a clear and shared vision of success?	<ul style="list-style-type: none"> • Clearly documented project objectives • Feedback from project stakeholders about perceived objectives 	Review of project documentation Interviews with project manager/other relevant staff/partners	A project workshop to assess/review the project logic could be useful here
e. Is the planned expenditure on different components in line with the objectives of the project?	<ul style="list-style-type: none"> • Resources allocated to different components (time, money) • Relative value of each component to project objectives/aim • Risk of each component not working and implications 	Review of project documents (budgets/project plan) Interviews with project manager/other relevant staff/partners	The aim here is to identify potentially expensive components that may not provide good value or that may be particularly risky

KEQ and sub-questions	Indicator/issues to consider	Data sources and methods	Comment
	<ul style="list-style-type: none"> Feedback from project stakeholders about appropriateness of resource allocation 		
f. To what extent are relevant stakeholders being involved?	<ul style="list-style-type: none"> List of stakeholders and their level of involvement Additional stakeholders identified (if relevant) Feedback from project staff about other key people/groups that could be involved and/or reasons why they have not been involved to date 	<p>Review of project documents (stakeholder engagement plans, project plan)</p> <p>Interviews with project manager/other relevant staff/partners</p>	
Mid-term/interim evaluation			
3. How well is the project being implemented?			
a. To what extent are the planned activities, outputs, budget and milestones on track?	<ul style="list-style-type: none"> Planned versus actual delivery of activities, outputs and milestones Budgeted versus actual expenditure Documentation of reasons for variations Feedback from project manager/staff on variations/challenges in delivery Assessment of whether delivery is likely to achieve overall targets/goals or if learnings/challenges require reassessment 	<p>Review of project documents (business plan, project plan, annual/milestone reports)</p> <p>Interviews with project manager/other relevant staff/partners</p>	The aim here is to help understand and summarise the story of project delivery and to 'take stock' and assess whether it is likely to meet any overarching targets
b. How well are the management, governance and engagement processes working, are risks being managed appropriately and is the project design being adapted in response to learnings?	<ul style="list-style-type: none"> Feedback from key project stakeholders about management and governance Feedback from project participants/landholders Issues identified in project documentation (issues identified in reports etc) Evidence of project management and governance processes being used (documentation being maintained/updated, steering group meetings occurring, etc.) 	<p>Review of project documentation (e.g. project plan, milestone reports, risk registers)</p> <p>Interviews with project manager/other relevant staff/partners</p> <p>Survey or other data collection from project participants (landholders)</p>	
4. How effective are key elements of the project?			

KEQ and sub-questions	Indicator/issues to consider	Data sources and methods	Comment
a. What are the key outcomes and achievements so far?	<ul style="list-style-type: none"> • Key project outputs (# deer controlled, # people engaged, # methods trialled, etc.) • Documented answers to research/monitoring questions (e.g. documented population changes to deer, changes in vegetation, findings about home ranges, insights on causation) • Outcomes in relation to adoption of methods by others (e.g. records of engagement, examples of adoption/integration of methods by others, perceptions of relevant agency representatives) • Other outcomes as identified in documents/by stakeholders 	<p>Interviews with project manager/other relevant staff/partners</p> <p>Review of monitoring/research findings/results/reports</p> <p>Interviews with research staff</p> <p>Survey of other relevant land management agencies engaged in deer control (potential)</p> <p>Case studies of adoption/integration of methods/learnings (potential)</p>	While outputs are certainly expected to be available, evaluation at this stage should also be aiming to have early findings on outcomes – i.e. preliminary analysis and reporting against key research/monitoring questions
b. To what extent are the monitoring methods and data likely to be adequate for future evaluation?	<ul style="list-style-type: none"> • Existence of adequate data to answer the above question • Plans for collecting data into the future • Feedback on challenges and issues collecting data 	<p>Assessment of documents and data above</p> <p>Interviews with project manager/other relevant staff/partners</p>	
5. What opportunities are there to improve the design, delivery or monitoring of the project?			
a. What project delivery issues or learnings need to be accommodated?	<ul style="list-style-type: none"> • Issues/lessons as identified above • Recommendations for improvements • Suggestions/feedback from project stakeholders 	<p>Assessment of documents and data above</p> <p>Interviews with project manager/other relevant staff/partners</p>	
b. Are there any early insights on how the impacts from the project could be strengthened?	<ul style="list-style-type: none"> • Potential efficiency improvements based on delivery and outcomes so far • Potential improvements to the reach/broader impact of the project • Potential improvements to the level of change among land managers 	<p>Assessment of documents and data above</p> <p>Interviews with project manager/other relevant staff/partners</p>	

KEQ and sub-questions	Indicator/issues to consider	Data sources and methods	Comment
	<ul style="list-style-type: none"> Alterations to the design of monitoring/research to strengthen findings/explore new questions Other opportunities identified by key stakeholders 		
Final evaluation			
6. To what extent has the project achieved its aim and objectives?			
a. To what extent has the project delivered an improved understanding of deer control?	<ul style="list-style-type: none"> Project documents clear results on efficacy and costs of individual methods Project documents clear results on interactions between deer population levels and vegetation changes (impacts and recovery) Project documents clear results on supplementary research questions (e.g. in relation to movement, behaviour, etc.) Perceptions of the clarity and usefulness of project results among involved stakeholders and experts 	<p>Review of project reports/research reports</p> <p>Interviews with project manager/other relevant staff/partners</p> <p>Interviews with relevant experts on project results</p>	
b. To what extent do we now have cost-effective methods (or a methodology) that can be implemented at a landscape scale?	<ul style="list-style-type: none"> Clear findings in monitoring/research reports outlining optimal deer control methodologies Control methodology is more cost-effective than current options (based on # deer controlled/\$ invested and/or cost to control to level that can be maintained by landholders) Control methodology is perceived to be cost-effective and feasible by stakeholders and experts 	<p>Review of project reports/research reports</p> <p>Interviews with project manager/other relevant staff/partners</p> <p>Interviews with relevant experts on project results</p>	
c. What is the level of interest in and uptake of the new methods?	<ul style="list-style-type: none"> Outputs related to engagement and reach 	Interviews with project manager/other relevant staff/partners	The focus here should be on outcomes (i.e. actual uptake) rather than outputs

KEQ and sub-questions	Indicator/issues to consider	Data sources and methods	Comment
	<ul style="list-style-type: none"> Outcomes relating to uptake (i.e. # land managers with changed practices/using new methodology) 	<p>Review of monitoring/research findings/results/reports</p> <p>Interviews with research staff</p> <p>Survey of other relevant land management agencies engaged in deer control (potential)</p> <p>Case studies of adoption/integration of methods/learnings (potential)</p>	
d. Have there been any other outcomes?	<ul style="list-style-type: none"> Outcomes identified in project documentation Outcomes identified by project stakeholders Outcomes identified by landholders involved in project 	<p>Review of project documentation (e.g. project plan, milestone reports, risk registers)</p> <p>Interviews with project manager/other relevant staff/partners</p> <p>Survey or other data collection from project participants (landholders)</p>	
7. How efficient was the project and how could it have delivered more value for money?			
a. How could the efficiency of delivery have been improved?	<ul style="list-style-type: none"> Final costings and resources required for different components Outcomes from each component and relative value related to cost Opportunities identified by key project stakeholders 	<p>Review of project documentation</p> <p>Interviews with project manager/other relevant staff/partners</p>	
b. What opportunities are there to leverage the results /ensure the project leaves a lasting legacy?	<ul style="list-style-type: none"> Final products/extension opportunities 	<p>Assessment of outputs/outcomes above</p> <p>Interviews with project manager/other relevant staff/partners</p>	<p>This could occur ahead of project completion to identify opportunities and/or reservation of some project funds. It may best be done as part of project management, rather than a separate evaluation process.</p>

KEQ and sub-questions	Indicator/issues to consider	Data sources and methods	Comment
8. What are the key lessons for the Environmental Trust and the project team?			
a. What are the overall lessons on project design?	<ul style="list-style-type: none"> • Synthesis of lessons and insights above • Additional lessons identified by project stakeholders 	Review of findings above Interviews with project manager/other relevant staff/partners	
b. What are the overall lessons on project delivery and evaluation?	<ul style="list-style-type: none"> • Synthesis of lessons and insights above • Additional lessons identified by project stakeholders 	Review of findings above Interviews with project manager/other relevant staff/partners	

Table 6. Summary of key methods for evaluating the feral deer management project.

Method	Relevant KEQs	Responsibility	Timing
Interviews with project manager	1-8	NRC	Early formative Mid-term Final
Interviews with project staff/partners	1-8	NRC	Early formative Mid-term Final
Interviews with research partners	2-8	NRC	Early formative Mid-term Final
Interviews with steering committee	1-3, 5,7,8	NRC	Early formative Mid-term Final
Survey of landholders (potentially supplementary interviews)	3,4,6	NRC/NPWS?	Mid-term Final
Survey/interview of other land managers/deer managers in agencies	4,6	NRC	Mid-term Final
Review of project documentation	1-8	NPWS to maintain NRC to review	Early formative Mid-term Final
Optional/ to consider			
Literature review	2a	NRC/NPWS	Early formative
Engagement of biometrician	2c	NRC	Early formative
Interviews with relevant experts	2a, 6	NRC	Early formative Final